

Climate and Nature Emergency Plan

2022/23 – 2029/30

Gwynedd Council



March 2022

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1. Introduction

Climate change is one of the biggest challenges of our times, and calls for co-ordinated action from each one of us. As a result of the dramatic change in temperature seen world-wide since the 1950s we are experiencing serious effects such as receding glaciers, rising sea levels and changes in the seasons. Extreme weather resulting in drought or flooding are also becoming regular occurrences. One of the main contributors to this rise in temperature is the high levels of carbon released into the atmosphere by human activity.

In March 2019 Gwynedd Council declared a climate emergency, and vowed to take definitive steps to reduce carbon emissions and to work towards a carbon-free future. We now believe that we also need to give equal weight to the nature emergency since both co-exist in parallel. Changes to temperature and rainfall as a result of

climate change can lead to loss of habitat for nature and wildlife, and the loss of such habitat in turn increases the carbon levels in the atmosphere. It is a vicious circle that must be broken.

We acknowledge that the long-term ambition of Gwynedd Council is to reach the ideal scenario of being a carbon-free council. In order for us to achieve this we need to plan how to respond and overcome the challenges facing us. One target that we can plan for, whilst we're on the journey, is how to become a net zero council by 2030.

The aim of the Climate and Nature Emergency Plan is to outline the steps that we will take between 2022 and 2030 to reach our ambition of being a net zero council.



2. The Council Leader's Foreword



It's so easy to take things for granted isn't it? How easy it is to forget how privileged we are to live in one of the most beautiful counties of Wales, if not the most beautiful! The environment and nature of Gwynedd are as unique and special as its people and language, and are therefore treasures that should be protected.

But Gwynedd is not unique at all in another way. We, like all other parts of Wales and the world, are already experiencing the effects of climate change. We can't ignore those effects and action has to be taken to alleviate them. It is therefore a privilege to introduce this Climate and Nature Emergency Plan, which will show how we as a council will respond to the huge challenges ahead.

I am delighted that the council has already reduced our carbon emissions by 58% between 2005/06 and 2019/20. This has given us a very robust foundation in planning the journey towards becoming a net-zero carbon council ultimately. It is on this foundation that the Climate and Nature Emergency Plan has been built.

I would like to thank the members of the council's Climate Change Board, both councillors and officers, for their work and enthusiasm in creating this plan. Teamwork brought the plan to fruition, and we can only implement it as one team. This is not a plan for 'environmental' areas of work, but a plan that will touch on the work of all elected members and staff of Gwynedd Council.

While this first publication of the plan focuses on the council's own work, and changes how we operate, we are also looking out towards our communities and partners. We will develop the plan over the coming years, and we are keen to do so by listening to and working with organisations and residents across Gwynedd.

Our children and young people are fully aware of the effects of climate change, and they are paying attention to what we as adults are doing in order to respond to the problems facing the planet. I'm very proud that we have a young generation who are interested enough in current affairs to want to put pressure on the people who take decisions. After all, it is their future, and that of every other generation to come, that we are shaping with our actions today. It is our moral responsibility as adults, and primarily for those of us who have the influence to change habits, to take the right decisions.

I view the Climate and Nature Emergency Plan as one piece in a large jigsaw that will help safeguard the future of our land and children. It is no less than our legacy for the Gwynedd of the future.

A handwritten signature in black ink, which appears to read 'Dyfrig Siencyn'.

Councillor Dyfrig Siencyn
Leader of Gwynedd Council

3. Gwynedd Council in 2030

We have drawn up the Climate and Nature Emergency Plan in order to share how we will try and realise our ambition, namely:

“Gwynedd Council will be net zero carbon and ecologically positive by 2030.”

This will be our measure, and we will plan our actions based on our belief that we can achieve this ambition.

This ambition is in keeping with the Welsh Government’s target for the public sector in Wales to be net zero carbon by 2030, and more can be found about this target in their document published in 2019 [Prosperity for All: A Low Carbon Wales](#) and in 2021 [Net Zero Wales: Carbon Budget 2 \(2021-2025\)](#). The Government has extended its target beyond the public sector since the [Environment \(Wales\) Act 2016 \(Environment Act\)](#) makes it a legal obligation for the Welsh Government to reduce greenhouse gas emissions in Wales by at least 80% by 2050. The Environment Act also places new obligations in relation to the decrease in biodiversity in Wales, and our hope is that this plan will also contribute to the ambition of maintaining healthy ecological systems and biodiversity for the future.

Similar to other public bodies in Wales, the council has committed to implementing the [Well-being of Future Generations \(Wales\) Act 2015](#), and ensuring a healthy net zero carbon future will contribute to all the well-being goals in the Act.

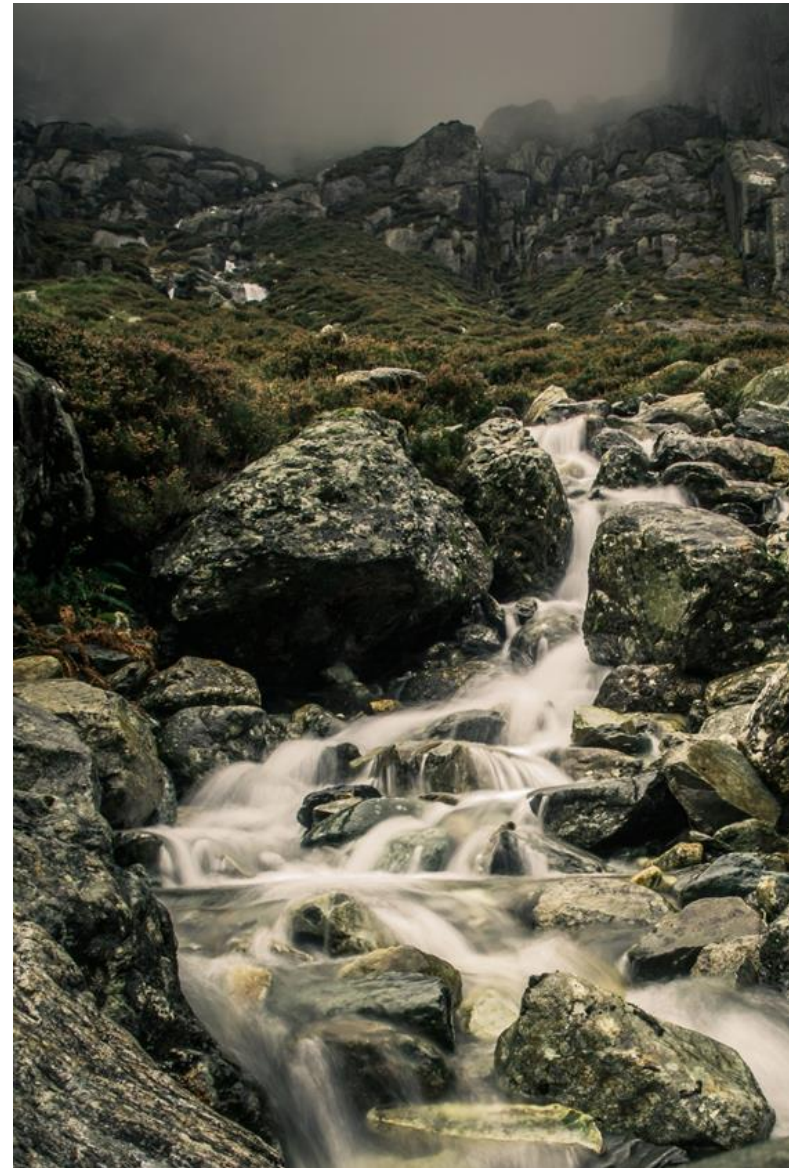
One of the 7 well-being objectives in [Gwynedd-Council-Well-being-Statement](#) is to ‘take advantage of the beauty of the county's natural environment’; and ‘responding to the climate change emergency’ is one of 8 Improvement Priorities in the [Gwynedd Council Plan 2018-2023: 2021/22 Revision](#).



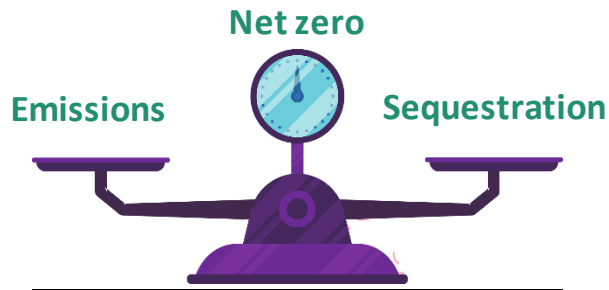
We need to be reminded that Gwynedd Council's commitment to reducing our carbon emissions is not a new statement. The council published its first Carbon Management Plan in 2010, and its Carbon Management Plan 2 in 2015. The Climate and Nature Emergency Plan is therefore an evolution of both its predecessors.

2005/06 was chosen as the baseline year for both Carbon Management Plans, and at that time the total carbon emissions from our buildings, street lighting, waste, fleet and business transport was 31,155 tCO₂e (further information on the meaning of tCO₂e in 'What is net zero carbon and why is it important?'). The council committed to reducing carbon emissions by 40% by 2021 compared with its baseline year, but indeed exceeded this target by going further and faster. By 2020 the council's carbon emissions were 13,003 tCO₂e, a reduction of 58%. The Welsh Government methodology that we must now follow means that this total has changed – more about this in 'Planning to achieve net zero carbon'.

There can be no doubt, therefore, that the council is committed to working towards achieving the ambition of being a net zero carbon council by 2030.



4. What is net zero carbon and why is it important?



It's inevitable that there will be some carbon emissions from activities that cannot be avoided, and therefore if we want to see a world without any damaging carbon in our atmosphere then that carbon needs to be destroyed or absorbed and stored safely. This is the meaning of carbon sequestration (or 'carbon removal'). Research and new technologies are being developed in order to understand how best to store carbon, but the most effective means of doing so at the moment are the natural methods where the carbon is stored in trees, plants, land and plankton.

If the total amount of carbon released into the atmosphere is equal to the carbon absorbed back into the earth then we have reached a position of being 'net zero carbon' (also known as 'carbon neutral').

Why do we need to reach net zero carbon?

The increase in levels of greenhouse gas (GHG) emissions in the atmosphere is the main reason why the average temperature of the planet has increased, especially over the last half century. Both graphs below show the average yearly temperatures for the world, and for Wales:

World average temperature 1850 - 2020



Wales average temperature 1884 - 2020



(Range of : blues = cold / reds = heat)

In turn, an increase in temperature leads to far-ranging implications that are very damaging for the environment, nature and for us as humans. The average temperature in Britain is now 1°C higher than it was a century ago, and sea levels are rising 3mm each year (UK Climate Change Risk Assessment 2017: HMGovernment). This may not appear to be significant, but we must remember that the

Intergovernmental Panel on Climate Change (IPCC) states that insects, which are vital for pollination of crops and plants, will lose half their habitats following an increase of 1.5°C, but the probability will double with an increase of 2°C. An increase of 1.5°C will lead to rising sea levels that will affect 6 million people living in coastal areas around the world, but an increase of 2°C will affect 10 million people.

The target to limit global warming to “well below 2°C” compared to pre-industrial levels was set as part of the United Nations Paris Agreement 2015, and further strengthened at the COP26 conference in November 2021. The COP26: The Glasgow Climate Pact declares:

“The aim of the UK COP26 Presidency was to keep alive the hope of limiting the rise in global temperature to 1.5C, and the Glasgow Climate Pact does just that. Combined with increased ambition and action from countries, 1.5C remains in sight, but it will only be achieved if every country delivers on what they have pledged”.

Even considering the minor differences in both timeline stripe graphs above, they clearly show the tendency towards a hotter climate is as true here in Wales as it is for the rest of the world. The need to keep the increase in temperature to 1.5°C or lower, and to reduce to effect of climate change already underway, is just as important here in Wales as it is in the Amazon rainforest or the deserts of Australia.

If an increase in greenhouse gases in the atmosphere is the main reason for the increase in temperature, then it follows that we need to decrease the level of those gases in order to halt further temperature increases. The 3 greenhouse gases which have the biggest effect on climate change are:

Most damaging greenhouse gases -

- Carbon Dioxide (CO₂)
 - Methane (CH₄)
 - Nitrous Oxide (N₂O)
- ...measured together as one unit, and called CO₂e

Method of measuring carbon emissions –

- Per kg – kgCO₂e
- Per tonne – tCO₂e

‘Releasing greenhouse gases’ or ‘greenhouse gas emissions’ are usually called ‘carbon emissions’, and by using terminology such as ‘carbon reduction’ what is meant is the reduction in the levels of all greenhouse gases, and not only carbon dioxide.

In order to be consistent with the measuring and reporting methods of the Welsh Government, UK Government and the IPCC, this plan will refer to ‘carbon emissions’, ‘CO₂e’ and ‘net zero carbon’.

5. Responding to the Effects of Climate Change

Thus far we have considered the importance of slowing down or stopping the process of global warming, and the need to reduce carbon emissions in the future. But what about the effects that global warming is already having on us here in Gwynedd?

One of those effects is the increasing danger of coastal flooding as a result of rising sea levels, and the effects of flooding inland as a result of extreme weather or an increase in river levels. Both could lead to ruining consequences for people, homes, nature and agricultural land.

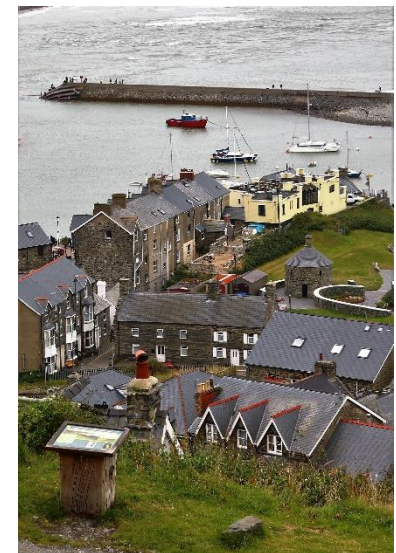
The Coast

Gwynedd's coastline is one of its most endearing attractions, but there are far reaching implications to protecting all of its 180 miles. The responsibility to protect the coastline and to respond to coastal flooding lies with Natural Resources Wales and Gwynedd Council. During the autumn of 2020 the Welsh Government published its National Strategy for Flood and Coastal Erosion Risk Management in Wales (FCERM), and its aim is to reduce the risks for people and communities from flooding coastal erosion. This is a ten-year strategy and we as a council are committed to its implementation, and it steers our work for the future.

Inland

As a Local Lead Flood Authority, we as a council have a responsibility to control the risk of flooding from surface water, ground water and from smaller streams know as common watercourses. In accordance with this responsibility we work together with Welsh Government, Natural Resources Wales and other local authorities to develop a Local Flood Risk Management Strategy. Its main objective is to try and stop flooding incidents, and to respond effectively if they occur, but its other aim is to positively contribute to biodiversity and create access for residents to green spaces.

This strategy will be completed during 2022/23 and therefore we haven't set targets or projects in this plan at this point in time since it would be premature to do so. A programme for responding to flooding risk will be added to a revised edition of this plan for 2023/24.



6. This Plan

This plan sets a target of net zero carbon for the activities and services that we as Gwynedd Council are responsible for. We intend to improve the way we provide services and run our organisation, and we'll be able to measure this since most of the work is under our management. The Climate and Nature Emergency Plan therefore contains the steps we will take in order to change those services that we directly provide.

The activities and projects that we will undertake to try and become a net zero council have been listed under the themes: Building and Energy, Mobility and Transport, Waste, Governance, Procurement, Land Use, Ecology, and all can be explored in chapters 7 - 13.

It is not, therefore, the ambition of this plan to create a work programme or to measure if the carbon emissions of Gwynedd as a county will reach net zero by 2030 – but of course, reaching the council's target will contribute greatly towards such an aim.

Reaching our ambition of net zero carbon will be a significant challenge and we are honest in our prediction that we don't have all the answers at the moment. More work needs to be undertaken by ourselves and others in order to find the most effective and successful ways of working in some areas. It is essential, therefore, to have an open mind and to learn about new developments, and

to adapt this plan and our ways of working if evidence comes to light that warrants such changes.

The Climate and Nature Emergency Plan is a document that will be developed and adapted regularly. We already know that we will include further information about our plans for flooding management by 2023/24, and we also need to work with partners and the communities of Gwynedd to plan how to positively change residents' behaviour.

On the other hand, there are several activities that we believe should be completed but that we have very little control over, or that we don't have the finances to fund at the moment. Additional resources will be needed to address our ambition, and we hope that further funding opportunities arise from Welsh Government and other sources.

We will co-operate and contribute towards realising ambitious plans, but we cannot fulfil them on our own.

Partners

It will be impossible for us as a council to achieve our ambition without working in partnership with a wide range of individuals and organisations. We provide services for, and alongside, so many other people and it is vital that we work together for everyone's

benefit. We will try to best of our ability to influence individuals and organisations to come with us on our journey. We will consult with our partners and with the communities of Gwynedd to measure the success of this plan and to see how best we can support them so that they may operate in as low carbon a way as possible.

A list of our partners can be seen in chapter 14. It isn't comprehensive, nor in order of priority, and we are open to discuss with any partner who also shares our ambition.

How will we measure success?

This plan will be monitored regularly as part of the council's internal performance monitoring process, and information about the plan's development will be shared publicly by the Cabinet Members Performance Reports to Cabinet meetings, and by Gwynedd Council's Annual Performance Report. We also have a Climate Change Board which provides strategic guidance, and includes the council's Leader, Cabinet Members, Chief Executive, Chief Officers, Biodiversity Champion and a representative of the Communities Scrutiny Committee.

One element of regular monitoring is data collection of carbon emissions and sequestration, and we do this by following Welsh Government's methodology ([Welsh Public Sector Net Zero Carbon Reporting Guide](#)). The results of annual data collation will be published in Gwynedd Council's Annual Performance Report, and

following publication we will also review this plan to ensure that we are on the right track to realise our ambition by 2030.

We have already collected data on carbon emissions and sequestration for the years 2019/20 and 2020/21. We have some reservations about the methodology used, especially for measuring the procurement upstream and downstream chains, but this data gives us a base to measure progress. Since 2020/21 was an unusual working year because of the circumstances created by the Covid-19 pandemic, we have chosen 2019/20 as our baseline year and we will compare progress against that year's data.

Data on carbon emissions is collected to measure activities in 3 areas, or 'scopes':

Scope 1 – Direct Emissions

e.g. producing electricity or heat with assets owned by the council such as boilers; travelling in council owned fleet.

Scope 2 – Indirect Emissions from Energy

e.g. electricity, heat or cooling systems produced by third parties but used by the council.

Scope 3 - Indirect Emissions

e.g. goods produced by third parties and purchased by the council; staff commute or staff using their own vehicles for business travel.

The Climate and Nature Emergency Plan runs concurrent with many other council strategies and policies, and indeed it is essential that the principles of this plan are entrenched across all the council's activities. Many of the action points for the future are likely to sit within other strategies or action plans. A current list of active strategies is listed in chapter 15, but it is open to constant adaptation.

Measuring carbon emissions and sequestration

As already mentioned, we won't know if we have reduced our carbon emissions and increased our capacity to absorb carbon unless we regularly measure both and compare the data with our baseline.

This is not a new activity for the council. As mentioned previously, the council have had two Carbon Management Plans since 2010 which were successful since we reduced our carbon emissions by 58% between 2005/06 and 2019/20, bringing the total down to 13,003 tCO₂e. Successes include changing 90% of street lighting to LED lamps so far, insulating buildings and installing PV solar panels.

Under both Carbon Management Plans we measured our carbon emissions from buildings, street lighting, waste generated by the council, council fleet and staff business travel. By today all local authorities must follow data collection methodology as set by Welsh Government, which leads us to measure many more activities in addition to those we measured up until 2019 – e.g. water use, biomass, emissions further up the supply chain (well to

tank), staff commute, emissions from the process of producing goods or services we purchase (procurement), and we also cannot claim credit for PV energy exported to the national grid.

Even though the council doesn't control many of these additional activities, we must now report on all the emission generated by them. The emissions generated by procurement are calculated based on the monetary value of the goods or services we purchase. Put simply, the more we spend the higher our carbon emissions, regardless of what the goods are or how they are produced.

It is therefore inevitable that the new data sets we collect will be much higher than those under both Carbon Management Plans.

The following table shows the data collected for the baseline year of 2019/20 and for 2020/21 following Welsh Government reporting guidance:

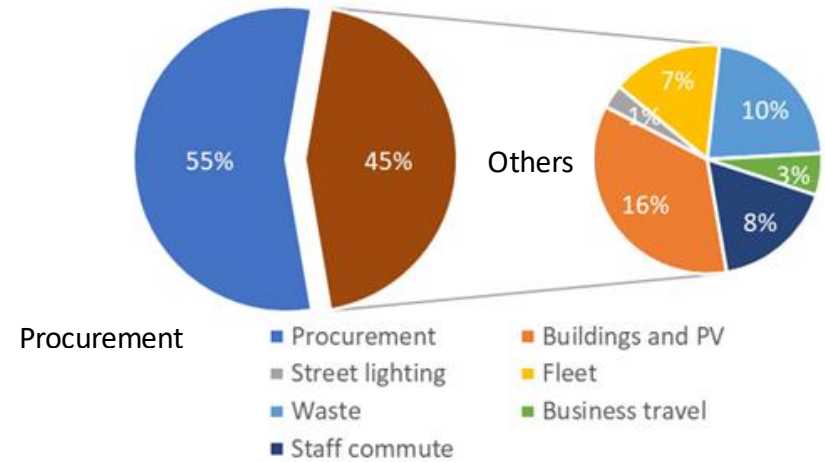
Total Operational Carbon Emissions over 2 years :

	2019/20	2020/21
	Total tCO₂e	Total tCO₂e
Buildings and PV (photovoltaic)	11,549	8,594
Street lighting	1,101	931
Fleet	5,145	4,729
Waste	7,331	
Business travel	1,944	919
Staff commute	5,623	5,701
Total	32,693	20,874
Procurement	40,639	39,959
Total including procurement	73,332	60,833

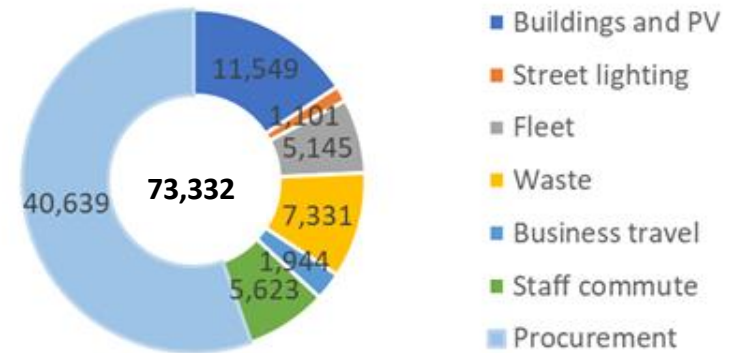
There are several reasons why the total has already fallen by 2020/21: stopping waste going to landfill and changes in working practices as a result of Covid-19 are examples.

The following charts show the total and percentages of emissions across several fields:

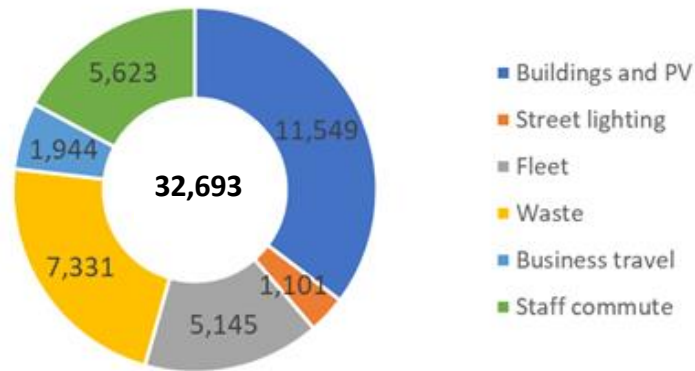
Percentage of carbon emission per field 2019/20



2019/20 Carbon Emissions by tCO₂e including procurement



2019/20 Carbon Emissions by tCO₂e



We also follow Welsh Government methodology to measure the total carbon that land owned by the council is able to absorb. The table below shows the different types of land to be measured, and the total carbon absorbed (sequestration).

Measuring total carbon sequestration:

Lands	2019/20 Total tCO ₂ e	2020/21 Total tCO ₂ e
▪ Forest land		
▪ Grassland	5,893*	5,893
▪ Wetlands		
▪ Settlements		

*based on 2020/21 figures

Gap that needs to be closed to achieve net zero carbon:

2019/20	32,693 – 5,893 =	26,800 tCO₂e	(67,439 tCO ₂ e with procurement)
2020/21	20,874 – 5,893 =	14,981 tCO₂e	(54,940 tCO ₂ e with procurement)

Planning to achieve net zero carbon

We need to close the gap of around 26,800 tCO₂e by a combination of reducing our emissions and increasing our capacity to absorb carbon. Regardless of the potential to increase carbon sequestration (more on this in [12. Land Use](#)) it is true that we need to concentrate on substantially decreasing our emissions, and our activities and projects intended for achieving this are outlined in the following chapters (mainly scopes 1 & 2):

7. Buildings and Energy

8. Mobility and Transport

9. Waste

We can support all the work in these areas by strengthening our internal procedures, and more on this can be found in the [10. Governance](#) chapter.

The **11. Procurement** chapter outlines our plans to begin the substantial challenge of reducing the carbon emissions within the supply chain, or the goods and services that the council purchases (scope 3).

Lastly, the **12. Land Use** ac **13. Ecology** chapters outlines our responsibilities to use our land to its maximum potential for carbon sequestration from the atmosphere, and to support nature and to increase biodiversity so that we build a green Gwynedd for the future.



Finance

Chapter **6. This Plan** has already explained that we don't have, at this moment in time, the total funds needed to fulfil all the projects in this plan. Some projects have already begun and therefore we already have the costs and funding details. Others can be partially developed whilst we seek additional funding, and others are dependent on continued grant funding.

There are also other projects that, for various reasons, we do not know what the full costs will be. We will need to undertake further work, or to co-operate with others, to calculate those costs.

Nevertheless, our current financial position does not stop us from starting or continuing to implement the projects outlined in this plan. Information about the estimated costs can be seen in chapters 7 – 13.

Timetable

Chapters 7 - 13 lists the projects we aim to realise and sets a timetable for their implementation. Here's a summary:

Short term	2022/23 – 2023/24	Years	1 - 2
Medium term	2022/23 – 2026/27	Years	1 - 5
Long term	2022/23 – 2029/30	Years	1 - 8

7. Buildings and Energy

As the Carbon Management Plan 2 came to its conclusion in 2020 the Welsh Government Energy Service (WGES) were appointed to assess the opportunities to reduce carbon emissions across the council's estate. A desk-top revision of current energy management practices was undertaken, along with a quantitative evaluation of the efficiency of council owned buildings, and further potential to save energy, reduce carbon emissions and costs.

Our carbon emissions from buildings and PV in 2019/20 was 11,549 tCO₂e. The following projects will contribute towards reducing this figure, but substantial financial investment is needed in some areas, such as solar farms, in order to bring this figure down to zero and beyond.

Planned projects -

	Ambition	Activity	Timetable	Projected costs £	tCO ₂ e savings – whole life cycle
7.1	Aim for long term benefits when planning building work or renovating buildings	Drawing up a policy which will give guidance on the minimum technical standards for energy efficiency in new buildings or when extending an existing building. We will price work based on a 'whole life cycle' principle.	Short term, then continuous	No additional costs	No direct savings
7.2	Save 5% of carbon emissions from buildings by bringing them up to CIBSE 'good practice' standards	Plan and implement a work programme to upgrade buildings.	Medium term, then continuous	Savings -225,000	488

7.3	Decarbonise the council's energy supply	We will move the energy supply for all the council's buildings to a supplier who offers 'green energy' by the end of 2022. 'Green energy' comes from renewable energy sources.	Short term	Further work needed to measure financial costs or savings	Further work needed to measure carbon savings
7.4	Increase our carbon 'credit' by creating solar farms to create energy that the council can use or sell	Further investigate the sites already identified for potential solar farms, and draw up business plans based on the best carbon and financial benefits.	Medium term	Range from 2,400 – 18,956,000	Year 1 effect = 377 – 10,201
7.5	Reduce our carbon emissions by expanding our use of PV to generate renewable energy	Expand our current programme for installing PV systems (or solar panels) to more of the council's assets. We will draw up business plans per asset but they may include offices, schools, care homes, leisure centres and car parks.	Medium term	1,862,000	7,234
7.6	Use <i>Passivhaus</i> low carbon building practices for developing our innovative housing pilot	We will continue to operate, and then evaluate, our pilot project to provide temporary accommodation in low carbon 'pods' – further information in our Housing Action Plan.	Short term	300,000	Further work needed to measure carbon savings
7.7	Provide information and advice to Gwynedd residents about the advantages and	Via the housing 'one stop shop' on the council's website we will promote the opportunities available to save energy and	Short term, then continuous	500,000	No direct savings

	opportunities to use low carbon building practices when building homes, and about low carbon heating/energy systems	costs by using low carbon methods of building and heating homes to try and avoid fuel poverty. We will also continue to work in partnership with community organisations who offer similar support in order to spread the message as widely as possible.			
7.8	Improve the fabric of council owned buildings to make them as energy efficient as possible	Much has already been accomplished, but further work can be done in some instances along with continuous maintenance.	Continuous	638,000	4,120
7.9	Electrification of heating systems in buildings to reduce carbon emissions	We will investigate the feasibility of installing electrification systems – or heat pumps – in buildings. Since substantial financial investment is needed for installation, further work needs to be done before choosing if they will be installed and which sites will benefit most.	Medium term	2,777,000	18,740
7.10	Installing EC air fans in buildings in order to reduce the energy needed to run them in comparison to other air fans	Electrical current (EC) air fans run on DC current rather than AC, and are managed digitally which leads to more efficient and quieter performance. We will investigate which of the council's assets they will be suitable for and build a work programme accordingly.	Medium term	93,000	153
7.11	Install individual room heating systems in order to reduce the	Wireless technology enables us to manage individual radiators without the need for	Short term	68,000	2,240

	energy needed to heat a building	expensive wiring. This will ensure that rooms can be heated at different temperatures and also to turn off the heat when the room is empty. We will build a work programme, and prioritise installation in care homes.			
7.12	Upgrade specialised lighting in leisure centres in order to use less energy	New technology allows us to use LED lighting in swimming pools and open-air playing areas. We will run work programme to upgrade the current lamps.	Medium term	107,336	254
7.13	Upgrade street lighting and traffic signs in order to use less energy	We have been running a programme to exchange the lamps from old SOX lanterns to new LED lanterns since 2015/16, leading to nearly halving the carbon emissions. We will continue with the remaining work programme and also investigate the need and advantages of dimming lights and its effect on biodiversity. Lastly, we will evaluate the project to learn lessons for the future and to plan a maintenance programme.	Short term	Further work needed to measure financial costs or savings	Further research needs to be undertaken to measure carbon savings
7.14	Stop the over-development of fossil fuel energy plans	Act according to the Replacement Joint Local Development Plan and the Supplementary Planning Guidance on renewable energy or low carbon technologies, water preservation, and protecting biodiversity.	Continuous	No additional costs	Dependent on plans which would have been submitted

7.15	Maximise the benefits gained from implementing our energy and heating policies	<p>By monitoring the application of policies by our staff, and monitoring the technologies which operate the systems, we can target where improvements need to be made.</p> <p>We will use Energy Management Software to monitor electricity data, and make improvements where needed.</p> <p>We will offer training to staff to implement these policies.</p>	Continuous	No additional costs	4,000
7.16	Equipment used within council buildings to be as energy efficient as possible	<p>Implement the Energy and Heating Policies and ensuring that bought 'white goods' have a A+++ rating.</p> <p>When hiring electrical equipment, priority will be given to those that can be switched off when not in use.</p>	Continuous	Dependent on total sum of equipment purchased or leased	Dependent on total sum of equipment purchased/leased
7.17	Improving the energy infrastructure in Gwynedd and north Wales in order to support low carbon energy and transport systems	We will contribute towards producing and implementing a Local Energy Plan under the leadership of Ambition North Wales	Short term	Work not started	Work not started

8. Mobility and Transport

There is great potential for the council to reduce the carbon emissions of our own fleet of vehicles, and we have commissioned studies to offer guidance on which new vehicles to buy in a time of ever-changing technological advances. We intend to move towards having a fleet of ULEV (Ultra-low Emission Vehicle).

Carbon emissions from our fleet (which includes refuse and recycling vehicles) was 5,145 tCO₂e in 2019/20, and emissions from business travel was 1,944 tCO₂e. Both of these are within scope 2,

but the total emissions from staff commuting (scope 3) was 5,623 tCO₂e.

The following project will contribute greatly to reducing these emissions, and many are running in conjunction with energy projects which will increase our capacity to produce our own renewable energy (e.g. solar farm) or are dependent on expanding regional or national energy networks.

Planned projects -

	Ambition	Activity	Timetable	Projected costs £	tCO₂e savings – whole life cycle
8.1	Move away from using fossil fuel vehicles to a ULEV fleet (cars and vans)	We will implement our Green Fleet Strategy, buying new vehicles when they become available.	Short term	369,000	877
8.2	Installing vehicle electrical charging points for council fleet	We will expand our programme for installing electrical charging points beyond the existing 4 sites to support the ULEV council fleet.	Short term	Further work needed to measure financial	Further research needs to be undertaken to measure carbon savings

				costs or savings	
8.3	To have a low carbon, or carbon free fuel option for the council's heavy vehicle fleet	Contribute to the Deeside Hydrogen Hub project under the leadership of Ambition North Wales which is investigation the use of hydrogen as a fuel for heavy vehicles. In the meantime, we will trial sweeper vehicles and gritter vehicles in order to move away from fossil fuel dependent heavy fleet.	Short and medium term	888,000	2,108
8.4	Installing vehicle electrical charging points for Gwynedd residents	We will install vehicle electrical charging points across Gwynedd for residents and visitors.	Short term	Further work needed to measure financial costs or savings	Further research needs to be undertaken to measure carbon savings
8.5	Reduce business travel	The Covid-19 pandemic accelerated the move towards remote working, which in turn significantly reduced the need to travel to council offices to conduct internal and public meetings. Section 3 of the Wales Local Government Act also notes that meetings of the Council, Audit and Governance Committee and Scrutiny Committees may be held using a combination of virtual hybrid and face to face working	Short term	Could be up to -550,000 financial savings, but further research needs to be undertaken following changes in working	Could be up to 445, but further research needs to be undertaken to measure carbon savings

		practices, but that the remainder of the council's meeting may be held virtually. We will continue to encourage staff and elected members to prioritise virtual meetings and to keep to a minimum the need to travel for face to face meetings.		practices during the Covid-19 pandemic	
8.6	Reduce the carbon emissions of staff commuting	<p>The council has formed a partnership with the Tusker company to offer a 'green car' plan, with the majority of staff members eligible. The plan offer staff the opportunity to drive a brand-new car, including maintenance and insurance costs, for three years for a set monthly sum</p> <p>We will promote this option to become an electric car owner, especially when vehicle electrical charging points are installed on the council's estate.</p> <p>We will also encourage staff to use public transport or walk or cycle to work where possible.</p>	Continuous	Further work needed to measure financial costs or savings	Further research needs to be undertaken to measure carbon savings
8.7	Encourage active travel amongst staff – for health and well-being benefits and to reduce carbon emissions	<p>The council has formed a partnership with 11 companies in Gwynedd to offer most staff the opportunity to hire a bike, which can include electrical bikes, on condition that they are used 50% of the time for work commute. The bike can also be used for leisure which will</p>	Continuous	Further work needed to measure financial costs or savings	Further research needs to be undertaken to measure carbon savings

		bring additional health and well-being benefits for staff.			
8.8	Encourage active travel for Gwynedd residents and tourists - for health and well-being benefits and to reduce carbon emissions from short car journeys	<p>The council has invested in many cycle routes over the past few years, and we will promote these to encourage residents and tourists to use them for walking or cycling to work, to shop or for leisure.</p> <p>We will also promote and encourage the use of public transport, walking and cycling as we develop our sustainable tourism strategy.</p>	Continuous	Further work needed to measure financial costs or savings	Further research needs to be undertaken to measure carbon savings
8.9	Reduce carbon emissions and parking problems in areas popular with tourists	Work in partnership with Snowdonia National Park on a travel plan for popular hot-spots - e.g. foot of Snowdon, Dyffryn Ogwen – in order to reduce car journeys and encourage the use of public transport.	Short term	Further work needed to measure financial costs or savings	Further research needs to be undertaken to measure carbon savings
8.10	Increase the opportunities for community organisations to have access to EV or ULEV vehicles	Our programme, Arloesi Gwynedd Wledig, will support individual community organisations or umbrella organisations to experiment with new low carbon technologies or use low carbon vehicles.	Continuous	Further work needed to measure financial costs or savings	Further research needs to be undertaken to measure carbon savings

9. Waste

It has already been explained that we calculate our carbon emissions by following Welsh Government methodology. The figure of 7,331 tCO₂e of carbon emissions from council waste in 2019/20 stems from the practice at the time to send waste to landfill. By 2020/21 no waste was sent to landfill, with all the council's waste being sent for safe burning, hence the emissions figure for 'waste' in 2020/21 was down to zero. The carbon emissions from waste sent for recycling or burning is accounted for under the figures for 'fleet'.

We will always seek opportunities to go beyond the target of net zero carbon, and therefore the following projects have been planned so as to maintain our target and also to promote the principles of a circular economy. Here we hope to reduce waste as much as possible whilst simultaneously encouraging economic activities and community regeneration.

Planned projects -

	Ambition	Activity	Timetable	Projected costs £	tCO₂e savings – whole life cycle
9.1	Repair, adapt and sell goods which would otherwise be disposed of as waste	We are currently adapting the Llandygai recycling depot in Bangor and will open a shop which will sell goods that have been repaired or adapted. We will continue to support this project.	Continuous	Further work needed to measure financial costs or savings	Further research needs to be undertaken to measure carbon savings

9.2	Reduce the amount of goods deposited as waste by encouraging residents to repair and re-use	Our Repair Café project will establish a network of centres/cafes across the county to train local residents with the skills to repair and re-use goods rather than dispose as waste.	Short and medium term	226,000	Further research needs to be undertaken to measure carbon savings
9.3	Promote a circular economy in order to reduce the amount of goods sent to waste sites, and the carbon emissions in the supply chain from buying new goods	We will run and then evaluate the 'Pethe' pilot project. This project will be managed by a third party in 3 locations across Gwynedd and its aim is to be a borrowing 'library' for goods – e.g. toys, goods for the home or garden.	Short term	33,222	Further research needs to be undertaken to measure carbon savings
9.4	Reducing food waste by supporting community projects that share surplus supermarket food	Continue to support the existing 11 community food hubs by providing information and advice	Continuous	No additional costs	No direct savings
9.5	Reduce the street waste sent for disposal and increase street waste sent to be recycled.	As part of our Clean and Tidy Communities plan, and our street cleaning programme, we will start a new pilot programme to install recycling bins in our communities. We will also install technologies in our bins that will compress waste and measure when bins are ready to be emptied. This will lead to fewer journeys for our heavy fleet vehicles.	Short term	35,000	Will be measured at the end of the pilot project
9.6	Reduce paper use	Before we were hit by the Covid-19 pandemic we had begun a project to measure our paper use across all the council's offices with the aim	Short term	Further work needed to	Further research needs to be undertaken to

		<p>of reducing use, and reducing the amount of energy used to run printing machinery.</p> <p>With the majority of staff now working from home, paper use has decreased significantly, but it's important to complete this project in order to learn lessons for when staff return partially or full time to our offices.</p>		<p>measure financial costs or savings</p>	<p>measure carbon savings</p>
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10. Governance

This chapter outlines the changes we believe need to be made in order to support the rest of the activities in this plan. By making changes to internal practices we as a council can create the best possible circumstances for our elected members and staff to take decisions and to act for the sake of our planet.

Much of the planning work behind this plan, and its revision in the future, is done in partnership with other organisations and communities. This underlying principle supports the projects listed below, and for many others outlined in this plan.

Planned projects -

	Ambition	Activity	Timetable	Projected costs £	tCO₂e savings – whole life cycle
10.1	<p>Elected members and staff who:</p> <ul style="list-style-type: none"> • Understand the consequences of climate change • Take decisions based on information about the consequences • Operate in the most positive manner possible in order to alleviate the effects of climate change 	<p>The council needs a workforce informed about climate change and ecology in order to take responsible decisions, and to act to reduce carbon emissions.</p> <p>We will introduce a continuous training programme for elected members and staff on the fundamental principles of this plan, and will investigate the need for further information or training in specific areas.</p> <p>The training will reinforce the clause already in staff job descriptions that states they will</p>	Short and medium term	No additional costs – funded by central training costs or provided by Welsh Government	No direct savings

	and to be ecologically positive	act according to the Carbon Management Plan.			
10.2	Encourage staff to develop their careers in fields which will lead to reducing the effects of climate change or are ecologically positive.	We will use the council's successful apprenticeship programme to encourage more new apprentices to follow careers in fields such as biodiversity and energy.	Continuous	No additional costs – funded by the Apprenticeship Scheme	No direct savings
10.3	Review current policies and strategies so that reducing carbon emissions or alleviating the effects of climate change are factors when making decisions	Implement a continuous programme of reviewing decision making and policy guidance, giving advice on which conditions can be set.	Short term, then continuous	No additional costs	No direct savings
10.4	Sharing information publicly about the council's work to reduce carbon emissions in order to influence others to do the same	We will create a 'one stop shop' on our website which will include all the information about the council's activities on this topic, and links to useful information on outside websites. This will be reviewed and updated regularly. We will share information and examples of good practice via our social media platforms in order to try and influence residents to change their practices.	Set up – short term Maintain - continuous	No additional costs	No direct savings
10.5	Support communities to plan and provide local answers to local needs	Our programme of developing Local Regeneration Plans/Our Area will identify the	Short term, then continuous	No additional costs	No direct savings

		<p>different priorities and concerns that may lie in different communities across the county.</p> <p>We will work alongside local communities and partners who provide services in order to implement the ambition of this plan.</p>			
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11. Procurement

Welsh Government data collection guidance leads us to collect data about council expenditure on goods and services provided by outside suppliers. These vary widely from auditing services or advertising costs to purchased goods such as food or personal protection equipment for schools and care homes.

Our carbon emissions under the ‘procurement’ heading is measured solely on expenditure, and not on any efforts to reduce costs or carbon emissions by ourselves or our suppliers as part of the process of setting contracts.

The total carbon emissions from all our procurement activity, by following the methodology explained above, was 40,639 tCO₂e in 2019/20, which comes under scope 3.

Gwynedd Council has operated its Sustainable Procurement Policy since 2011, where we consider the possible social, economic and environmental effect of our procurement decisions, and which steps we can take to make best use of council spend for the county’s benefit. ‘Reducing the negative environmental effects by better choice and use of goods, services and work’ is an aim within the policy.

We will continue to implement the Sustainable Procurement Policy, and will develop the following projects -

	Ambition	Activity	Timetable	Projected costs £	tCO₂e savings – whole life cycle
11.1	Provide support for the market, especially local companies, to be able to measure the effect of their actions on their carbon footprint	We will continue to work with Busnes Cymru and others to introduce a programme of information to support businesses. This will help them reduce their carbon emissions without impairing their ability to submit tenders for work.	Continuous	No additional costs	No direct savings

11.2	Understand and measure carbon emissions when delivering contract in the supply chain	We will continue to review our own processes to set criteria for assessing tenders so that we can be sure that we are measuring the environmental impact of contracts.	Continuous	No additional costs	No direct savings
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12. Land Use

Responsible management of council owned land will reap many benefits. Not only can it offer life to many species by protecting or even saving them, but our land is also a natural carbon absorbing machine and we should maximise its potential.

Our assessment to measure the carbon sequestration capacity of all the council's land in 2020/21 showed that it could absorb 5,893 tCO₂e. This assessment is based on the following types of land:

Forest land	A combination of different trees: native, evergreen etc. Some will be dense, and other will be populated by less trees.
Grassland	Combination of land where grass grows – some are not cut whilst others are cut regularly, e.g. playing fields, school grounds or road verges.
Wetlands	Land containing peat; land regularly covered in water; lakes and rivers.
Settlements	Any developed land that doesn't already appear under another category, e.g. buildings. They may include: multipurpose playing fields, transport infrastructure, 'grey' pre-industrial land.

We acknowledge that further work needs to be done in order to fully and correctly measure the carbon sequestration potential of our lands – e.g. types of trees, constitution of soil etc. This is a very common problem for many local authorities and organisations and we will therefore work with others to form a programme to collect data and manage our land for the future.

Flooding

Another element of the work needed to treat and protect our lands are the steps needed to alleviate the effects of flooding. The council has already partaken in many projects in coastal areas, e.g. Fairbourne, and has responded to many occurrences of flooding in inland areas. Climate change has of course contributed to most of the increase in flooding and therefore unfortunately those instances are likely to increase.

We are currently working with Welsh Government, Natural Resources Wales and other local authorities to draw up a Local Flooding Strategy. Its main aim will be to try and stop instances of flooding and to respond effectively if flooding occurs, but it also has a purpose to positively encourage biodiversity and provide access for residents to green spaces.

This strategy will be completed in 2022/23 and therefore we haven't set any targets or projects within this plan since doing so

would be premature. A full programme to respond to flooding will be added to this plan for 2023/24.

The work to respond to flooding will tie closely with our work to maintain our land and biodiversity, since changes in one could

adversely affect the other. For example, maintaining wetlands or planting trees high up in a valley could reduce the amount of water flowing down into rivers and causing floods lower down the valley. Many of the projects in this chapter, and the following ‘Ecology’ chapter will contribute to alleviating the effects of flooding.

Planned projects -

	Ambition	Activity	Timetable	Projected costs £	tCO₂e savings – whole life cycle
12.1	Identifying the contribution that council owned trees can make to carbon sequestration and reducing the possibility of flooding	Accelerate our programme to correctly measure data from council owned trees for their success, or not, in carbon sequestration	Short and medium term	Further work needed to measure financial costs or savings	2,715+
12.2	Identifying the contribution that council owned lands can make to carbon sequestration and reducing the possibility of flooding	Accelerate our programme to correctly measure data from council owned lands for their success, or not, in carbon sequestration	Short and medium term	Further work needed to measure financial costs or savings	3,612+

12.3	Create tree nurseries to grow trees ready for planting	Work in partnership with other organisations and educational institutions to create tree nurseries	Medium term	Further work needed to measure financial costs or savings	Further research needs to be undertaken to measure carbon savings
12.4	Identify opportunities to plant trees as part of the National Forest for Wales initiative	Work in partnership with Welsh Government on their National Forest for Wales initiative and increase the numbers of trees to be planted	Medium term	Further work needed to measure financial costs or savings	No direct savings
12.5	Manage Ash Dieback in trees and to make good for any carbon emissions as a result of cutting down trees	Continue with our programme to identify and treat ash dieback. Ensure, if a tree needs to be felled, that another tree is planted in its place, in conjunction with other tree management projects in this plan	Continuous	No additional costs	Carbon neutral
12.6	Forest land owned by the council are protected so that we maximise their potential to absorb carbon and be habitats for nature	Improve our management of the current 4 forest lands, and any other new forests the council may plant, so that they are healthy and robust for the future	Continuous	Further work needed to measure financial	2,715+

				costs or savings	
12.7	Protect agricultural land in Gwynedd to be used for suitable purposes, and to contain forestation projects	<p>At its meeting on 2 December 2021 Gwynedd Council adopted the following:</p> <p>The Council calls on the Welsh Government to:</p> <ul style="list-style-type: none"> • Urgently amend the eligibility of their Glastir (GWC) grant so that only active farmers in Wales are able to apply. • Introduce planning development legislation to enable local planning authorities such as Gwynedd to control afforestation projects. • It is vital the Welsh Government moves to protect Wales’ rural environment and resources for the benefit of a new Green circular economy and to strengthen Welsh industries, communities and services. 	Medium term	No additional costs	No direct savings

13. Ecology

Gwynedd Council declared a climate emergency in 2019, but we now believe that we also need to give equal weight to the nature emergency since both co-exist in parallel. Losing natural habitats for wildlife can increase the carbon levels in the atmosphere and changes in temperature and rainfall can affect the distribution of wildlife habitat.

It is evident that the result of global warming is having a detrimental effect on the natural world, even here in Wales, and that we need deliberate action if we are to protect our fragile ecosystems for the future.

Our ambition is to not only protect the natural world and biodiversity in our county from the harmful effects of climate change, but also to strengthen it so that nature can positively contribute to the battle for carbon sequestration, as explained in the chapter [12. Land Use](#).

We want to be an ‘ecologically positive’ council, not only in a climate change context but because we believe that nature has an immeasurable worth of its own. One of seven of the council’s well-being aims is to ‘take advantage of the beauty of the county’s natural environment’, and the ‘importance of protection of the natural environment’ and ‘promoting the use of natural resources to improve health and well-being in the long term’ are two out of

nine key messages in the Gwynedd and Anglesey Well-being Plan (Public Service Board).

In June 2021 Welsh Government declared a Biodiversity Emergency and noted: “There is an inherent value in biodiversity and the benefits it offers people through eco-systems such as flood alleviation and food production. We therefore believe that biodiversity loss leads to a risk to public safety and well-being”.



Planned projects -

	Ambition	Activity	Timetable	Projected costs £	tCO₂e savings – whole life cycle
13.1	Identify the steps we need to take to protect nature habitats and biodiversity for the future	Review the Biodiversity Action Plan by the end of 2022	Short term	No additional costs	No direct savings
13.2	Identify valuable species and habitats and which measures need to be taken to protect and restore them	Natur Gwynedd (Local Nature Partnership) to create a new Nature Restoration Plan for Gwynedd based on the Wales Nature Restoration Plan published by Welsh Government	Short term	No additional costs	Dependent on the content of the Nature Restoration Plan for Gwynedd
13.3	Increase the number of pollinators by protecting habitats or creating new habitats	<p>Transform the Ffridd Rasmus and Llwyn Isaf landfill sites to become wildflowers meadows.</p> <p>Use the Local Places for Nature programme to maximise the potential of schools' land by planting flowers and plants suitable for pollinators (insects/bees).</p> <p>We will continue with our programme to maintain grass verges on our roads and to control the frequency and locations of grass cutting in order to support biodiversity, where it's safe for drivers and pedestrians.</p>	Medium term	400,000	Further research needs to be undertaken to measure carbon savings

13.4	Support voluntary and community organisations, and town and community councils who wish to protect or promote wildlife	Use the Local Places for Nature programme to kick-start new projects and to continue with others – e.g. getting rid of alien species in the Ffestiniog area; manage the Lôn Cob Bach nature reserve in Pwllheli	Medium term	No additional costs	Further research needs to be undertaken to measure carbon savings
13.5	Encourage and maintain Gwynedd residents' interest in ecological matters so that they wish to protect natural habitats	Encourage and maintain Gwynedd residents' interest in ecological matters so that they wish to protect natural habitats	Continuous	Further work needed to measure financial costs or savings	Further research needs to be undertaken to measure carbon savings
13.6	Protect valuable habitats for nature	Work in partnership with Natural Resources Wales, town and community councils and the RSPB to maintain 8 nature reserves across Gwynedd.	Continuous	No additional costs	Further research needs to be undertaken to measure carbon savings

14. Partners

As has been noted several times, Gwynedd Council cannot fulfil all the work that needs to be done to achieve our ambition of being net zero carbon by 2030 on our own. Many of the projects mentioned in this plan should be planned and implemented in conjunction with other organisations. We as a council are also prepared to contribute to developing ideas or undertaking projects which are led by other organisations.

Below is a list of partners with whom we will be working to realise this plan. The list isn't in priority order and we will be adding to it and changing it often –

- Gwynedd and Anglesey Public Services Board
- Ambition North Wales
- Energy Service (Welsh Government)
- Gwynedd Community and Town Councils
- Anglesey County Council
- Conwy County Borough Council
- Denbighshire County Council
- Flintshire County Council
- Wrexham County Borough Council
- Natural Resources Wales
- Welsh Local Government Organisation
- Snowdonia National Park
- Natur Gwynedd
- RSPB
- Y Dref Werdd
- Partneriaeth Ogwen

15. Strategies and Policies

Further information about some of the action points mentioned in this plan already exists in other published documents. Rather than repeating this information here you can turn to the following documents for further reading (not all are published on our website) -

[Gwynedd Council Plan 2018-2023](#)

[Gwynedd Council Annual Performance Report](#)

[Gwynedd Housing Strategy 2019-24](#)

[Gwynedd Council Housing Action Plan 2020/21 – 2026/27](#)

[Gwynedd and Anglesey Well-being Plan \(link to Public Services Board website\)](#)

[Replacement Joint Local Development Plan](#)

[Sustainable Procurement Policy and Guide](#)

[Tree Preservation Order](#)

Energy Policy

Heating Policy

Lighting Policy

Green Fleet Strategy

Corporate Assets Strategy

